Source Water Assessment Program (SWAP) Report For Harborside Village

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared:
October 23, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	Harborside Village
PWS Address	P.O. Box 715
City/Town	Wellfleet, Massachusetts
PWS ID Number	4318040
Local Contact	Ray Steele
Phone Number	508 384-7446

Well Name	***Source ID#***	***Zone I (in feet)***	***IWPA (in feet)***	***Source Susceptibility***
Well #1	4318040-01G	230	797	High
Well #2	4318040-01G	230	797	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

Harborside Village (formerly Schuster's Trailer Park) is a privately owned trailer park consisting of 85-trailer sites and two (2) residential homes. Harborside Village is served by two (2) wells located in the northern portion of the property. Well #1 is a two-inch well located below grade and drilled to a depth of 65 feet. Well #2 extends 12 inches above grade and is drilled to a depth of 67 feet. The system is equipped with a propane fueled emergency power generator. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers (i.e. clay) that can prevent contaminant migration.

Well #1 was approved by the Department in a letter dated November 28, 1989 after completing the new source approval process. The average daily withdrawal for the wells

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

is limited to 17,880 gallons per day, based on the current Zone I of 230 feet and Interim Wellhead Protection Area (IWPA) of 797 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. Please refer to the attached map of the Zone I and IWPA.

The well serving the facility has no treatment at this time. For current information on monitoring results and treatment, please contact the public water system contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:
1. **Inappropriate Activities in Zone Is;**
2. **Aboveground Storage Tanks (AST) With Heating Oil.**
3. **Septic System,**
4. **Lawn Care and Maintenance**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one High threat land use or activity in the IWPA, as seen in Table 2.

Zone Is – Currently, both wells fail to meet DEP's restrictions, which only allow water supply related activities in Zone Is. The Zone Is for well #1 and well #2 contain aboveground storage tanks, trailers, homes, roads, landscaped areas and parking areas. The Department observed that several aboveground storage tanks located in the Zone I had containment structures, but they appeared to not be impermeable or the containment volume was less than 110 percent.

An estimated 50 gallons of #2 fuel oil leaked from an AST located adjacent to the residential trailer impacting the surrounding soil approximately 150 feet from well #1 and well #2. The MA DEP was notified of this condition in accordance with Chapter 21E of the Massachusetts General Laws on April 3, 1999 and released tracking No. RTN 4-14694 was assigned. A response action outcome (RAO) class A-2, completion statement was received by the Department on May 4, 2000. The filing of a response action outcome indicates that a … "level of No Significant Risk of harm to health, public welfare and the

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Aboveground Storage Tank	Well #1, #2	Well #1, #2	High	AST in-home north of wells
Parking, driveways & roads	Well #1, #2	Well #1, #2	Moderate	Limit road salt usage and provide drainage away from wells
Residential	Well #1, #2	Well #1, #2	Moderate	AST, Lawn care, gardening, septic systems, household hazardous waste
Septic System	No	Well #1, #2	Moderate	Refer to septic system brochure in the attachments
Storm water	Well #1, #2	Well #1, #2	Low	
Structures	Well #1, #2	Well #1, #2	-	Non-water supply structures in Zone I

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please refer to the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

environment has been achieved at this site" (Response Action Outcome Statement for RTN 4-14694, May 3, 2000). The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

The public water supplier does not own and/or control all land encompassed by the Zone I. The Northeast portion of the trailer site is not owned by Harborside Village. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems. The definition of "expand" is any activity that would result in an increase in withdrawal from existing sources. Examples are: 1. addition of a service connection for new or existing living units, 2. the addition of a bedroom or bedrooms to living units that are connected to your system.

Recommendations:

- To the extent feasible, remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- Inventory all ASTs in the Zone Is as to whether the tanks have external 110 percent secondary containment (vaulted) or internal secondary containment (tank within the tank) and are sealed to be impermeable (refer to attachments).
- For existing aboveground storage tanks in Zone I without secondary containment, the Department recommends that you consider the following options:
  A. If feasible convert to propane/natural gas, or
  B. If option "A." is not chosen you are required to provide a 110% percent secondary containment for all aboveground storage tanks within the 230 feet Zone I. The Department's November 28, 1989 pump test approval letter required all liquid fossil fuel storage facilities which are located within the Zone I be placed in an aboveground vaulted containment structure (as depicted on drawing No. SK-2) and be adequately enclosed (covered) to prevent standing water, snow, ice within the containment structures. The plan SK-2 specifies that all AST secondary containment structures are to be sealed as to be impermeable to oil for all fossil fuel tanks in the Zone I.
- Do not exceed the average daily withdrawal limit for this public water system of 17,880 gallons per day.

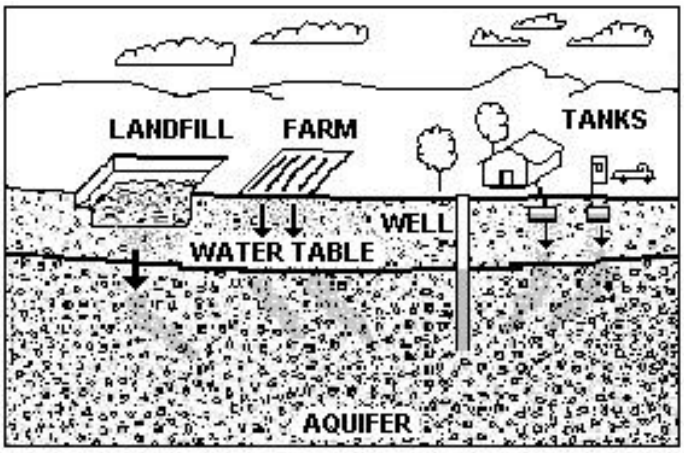

Figure 1: Example of how a well could become contaminated by different land uses and activities.

- Do not use or store pesticides, fertilizers or road salt within the Zone I.
- For more information about the state's oil and/or hazardous material (OHM) site cleanup process to which the reference site was subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site-specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

2. Aboveground Storage Tank (AST) in IWPA – In addition to the tanks in the Zone I, there were numerous tanks within the IWPA that did not have secondary

For More Information:

Contact Mark Dakers in DEP's Lakeville Office at (508) 946-2847 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, and town boards.

containment. If managed improperly, Aboveground Storage Tanks can be a potential source of contamination due to leaks or spills of the chemicals they store.

Recommendations:

- If you have an existing aboveground storage Tank in IWPA without secondary containment no modification is required by the drinking water program for the tank if it is in compliance with all other state and local requirements. However, the drinking water program recommends 110% secondary containment for all aboveground storage tanks in Wellhead protection areas.
- The Department recommends that you inspect, maintain and replace or upgrade components of your heating system regularly. Inspect oil lines (i.e. furnace to tank) for corrosion or pitting and replace copper lines with lines encased in a protective sleeve or install UL listed oil safety valve to prevent leaks.
- Make sure AST legs are on a firm base and are protected from vehicles.
- Encourage residents to convert to propane or natural gas or provide secondary containment for all tanks within the IWPA (refer to attachments).
- Work with the local fire Department to ensure compliance with local code requirements regarding ASTs.
- During refilling of AST, ensure that the operator of the oil transport tanker does not leave the vehicle area while the AST is being filled.

3. **Septic Systems** - On Jan. 30, 1998 the Department issued a groundwater discharge permit SE #0-640 for Schuster's Trailer Park. The groundwater discharge permit was for a proposed wastewater treatment facility for the trailer park. The wastewater facility was designed to treat a maximum of 21,600 gallons per day sanitary sewerage by means of an Amphidrome treatment system. The wastewater treatment system is designed to remove nutrients and disinfect wastewater prior to discharge to subsurface leaching area. The wastewater treatment facility has not been constructed. Harborside Village will be required to initiate construction of the plant in the near future.

   Currently, septic systems are located within the IWPA of both wells. If a septic system fails or is not properly maintained it could be a potential source of nutrients and microbial contamination. Improper disposal of household hazardous chemicals to the septic system is a potential source of contamination to the water supply.

   Recommendations:

- Septic system components should be located, inspected, and maintained on a regular basis. Refer to attachment for more information regarding septic systems.
- Educate residents on private septic systems about using cleaning compounds that are safe for the septic system, on proper disposal practices, i.e. only sanitary waste in the septic system. Residents should dispose of used oil, antifreeze, paints, and other holes hold chemicals properly-not in septic systems. Information on septic systems can be found at mass DEP web site http://www.state.ma.us/dep/brp/files/yoursyst.htm.

4. **Lawn Care and Maintenance** – Over-application of pesticides and fertilizers on lawns is a potential source of contamination to the water supply.

Recommendation:

- Provide educational materials to residents about the proper application of pesticides or fertilizers. Refer to attachments, A Homeowner Guide to Environmentally Sound Lawn Care and Pesticide and Fertilizer fact sheets. Additional, information on environmentally sound lawn care practices can be obtained from the Massachusetts Department of Food and Agriculture Pesticide Bureau's web site at http://www.massdfa.org.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. Drinking water protection area signs were not posted at key locations at the time of the SWAP site visit. Harborside Village should review and adopt the **key recommendations** above and the following:

Zone I:

- Keep non-water supply activities out of the Zone I.
- Conduct regular inspections of the Zone I. Look for illegal dumping, and evidence of vandalism.
- If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

Training and Education:

- Drinking water protection signs were not observed during the SWAP site visit. Post drinking water protection area signs at key visibility locations.
- Educate residents on proper application of pesticides and fertilizers.
- As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential sources of contamination include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents. Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, see the hazardous materials guidance manual at www.state.ma.us/dep/bwp/dhm/dhmpubs.html.
- For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.
- Septic system components should be located, inspected, and maintained on a regular basis.

Planning:

- Work with local officials in Wellfleet to include Harborside Village's IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Heating Oil Delivery Lines, A Homeowner's Guide to Preventing Leaks
- A Homeowner's Guide to Avoiding Costly Heating Oil System Leaks
- Recommended Source Protection Measures Fact sheet
- Your Septic System Brochure
- Fertilizer Use Fact sheet
- Pesticide Use Fact sheet
- Wellhead Protection Grant Program Fact Sheet
- A Homeowners Guide to Environmentally Sound Lawn Care